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Title : Assessment of immature Hawaiian monk seals' foraging behavior, habitat use and prey type using Crittercam

Category : Ecology

Student :

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Abstract : Chronic high juvenile mortality and a decline in abundance of the largest subpopulation of Hawaiian monk seals at French Frigate Shoals, Hawaii, have prompted studies of the habitat use and foraging behavior of young animals using seal-mounted video cameras (CRITTERCAM) and time-depth recorders (TDRs). Study objectives were to determine whether camera attachment affected immature monk seal foraging behavior and to characterize habitats used by immature foraging animals to investigate potential links between foraging location, prey abundance, and monk seal survival. Diving records were obtained from five individuals during and after CRITTERCAM deployments in 2001 and 2002 to compare seven dive and foraging trip components (maximum depth, dive duration, bottom time, ascent rate, descent rate, trip duration, and percent time submerged) with the camera attached and removed. No significant differences were found in any component (paired t, $p > 0.05$). Foraging depth of immature seals ($n = 9$) was negatively correlated with age. Yearlings fed in sand fields on outer atoll slopes between 70 and 100 m, while two to three year olds foraged at shallower depths (10 to 30 m), where they searched isolated coral, sand fields, and the reef structure. Comparing data of immature seals to previously collected adult data indicates similar selection and use of foraging habitats. Cryptic benthic fauna inhabiting open sand fields were a common prey target for both age classes. The seals' use prey in this sand habitat may be the strongest link yet identified between the seals' survivorship and prey availability changes associated with oceanographic dynamics.